Installation and Operating Instructions For the PA810 Single Head Filler

April 2007
Models PA810TV and PA810MV
New Fill Valve Model
Plus Options

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PA810 – Single Head Bag Filling System

Installation and Operating Instructions

MAIN SERVICES REQUIRED

Floor Space Required- 1000W X 1500D X 1600 H.

Electrical Power

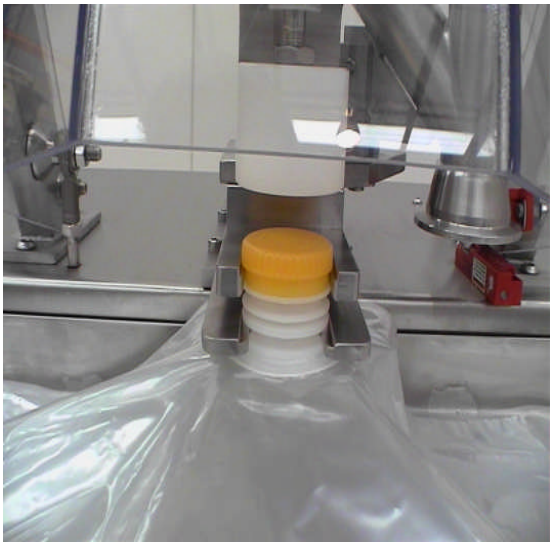
Supply- 200-240 V @ 50/60 Hz (Single Phase) 10 amps
(3 pin General Purpose Outlet)

Air

Compressed Air Supply - Min 600 kPa. Approx 10m3 /hr of clean dry air
(Connection via “1/4” BSP Female air fitting)

Product

Product Supply Rate - 10-220 liters per minute.
Maximum Fill Pressure 300 Kpa
(Connection via 1 Tri-clover hose tail)



By

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INSTALLATION DETAILS

Each machine is supplied ready to operate but the following items will require your attention.

Basic Accessories

- 1 - Product hose 40mm - 1300mm long
- 2 – 40mm Tri-clover clamps
- 2 – Flow Meter adaptors
- 1 – 50mm Flow Meter Tri-clover clamp
- 2 – 40mm Tri-clover gaskets
- C.I.P. adaptor backflow valve with 25mm Tri clover end fitting

Basic Seals Kit

- 2 – Tri-clover seals
- 2 – Fill piston O ring seals
- 1 – Plunger O ring
- 3 – Swivel O rings
- 1 – Tube of valve lubricant
- 2 – Filler valve face seals

International Seal Kit

- 6 – Tri-clover Seals
- 6 – Fill Piston O ring seals
- 3 – Plunger O rings
- 6 – Swivel O rings
- 1 – Tube of Valve lubricant
- 6 – Filler valve face seals

1. Adjust machine feet so that machine is stable and level.

2. Assemble the product hose onto the fill head and the other end onto the top of the flow meter via the flow meter mounting bracket of the rear of the machine.

NB: This flow meter is directional type and must be mounted with the ARROW in the direction of flow.

3. Adjust the table top into place and tighten clamping Knobs. Test the height of the table by using a filled bag and checking the desired spout space at the top of the bag.

4. Connect air supply to the filter regulator port on the side of the machine please do not adjust the regulator as this is factory set and should not be altered.

5. Connect to a 240-volt supply. Check for the screen to illuminate, if not inspect the breaker inside the rear cabinet. Make sure the EMERGENCY STOP button is not latched in. Keep hands clear of the mechanism and turn the POWER switch to ON.

Please note: Even though the machine is fully cleaned before transport to you we advise That a full C.I.P be completed before any production commences.

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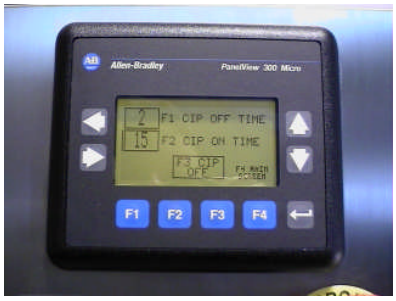

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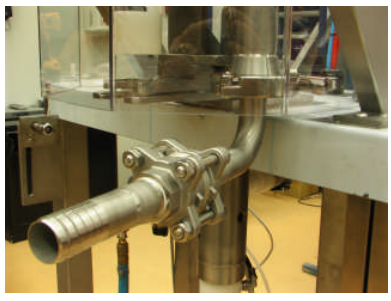
C.I.P (CLEAN IN PLACE)

The product supply line should be cleaned and sanitized prior to introducing the product to the filler.

1. Ensure the machine is in the home position.
2. Press the F4 key on the Main screen to go to the CIP screen
3. Ensure that the vacuum pump is disconnected / removed and the lid to the vacuum tank is open to allow for complete flushing of the vacuum system.
4. Set/Confirm the CIP cycle times: Tip Open Time (0-99 seconds)
   Tip Closed Time (0-5 seconds)
5. Press BOTH START buttons. The Head moves UP to the CIP position.
6. Press the E/STOP Button
7. Clamp the CIP adaptor to the fill spout with the Tri-Clover fitting supplied.
8. Release the E/STOP button
9. Push BOTH START buttons to start the continuous Pulse cycle.
10. When the CIP process is complete push the E/STOP button
11. Remove the CIP adaptor and Tri-Clover fitting.
12. Release the E/STOP button
13. Push BOTH START buttons to return the fill head to the home position.

C.I.P ADAPTOR



C.I.P ADAPTOR FITTED

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MANUAL OPERATION:

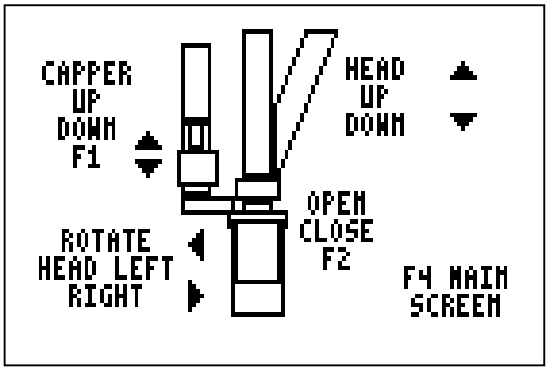
****** Warning in Manual mode Two hand operation is Disabled ******

Note: Once the manual screen is selected completion of an Automatic fill must be done manually.

1. Move to the manual screen by pressing F3 on the main screen.
2. Then select the required movement by pressing buttons F1 and F2 or the arrow buttons on this side of the screen.
3. The Manual Fill Head rotation will only operate if the head is in the raised position.
4. If at any time you wish to return to the start position just press both start buttons and hold until home.

F1 – CAPPER UP DOWN
F2 – OPEN CLOSE FILL SPOUT
– ROTATE HEAD LEFT RIGHT
– HEAD UP DOWN

PA810
Single Head Filler



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BIB Automatic Operation:

The product supply line should be cleaned and sanitized prior to introducing product to the filler.

BIB Mode:

1. Ensure the filling head is in the home position.
2. Press the F1 key on the Main screen to go to the Run screen.
3. Set the Target amount required by pressing F1. Press ↵ to save.
4. If twin flow meters are fitted press F2 which takes you to the Flow meter page. This allows you to change from Turbine to Magnetic flow meter by pressing F2. Press F4 and then F1 to return to run screen.
5. Check that BIB Mode is displayed. If not select by pressing F3.
6. Ensure that the vacuum pump is ON and sufficient pressure (approx. 20-60kpa) has built up. (If this option is installed)
7. Place the spout of the bag into the bag fork.
8. Press both Start buttons.
9. On completion of the filling of the bag the filler will return to its home position.

Notes:

1. **If the Emergency Stop is pressed during filling the fill valve will close and will no longer complete to the target amount. Release the Emergency Stop button and press both Start buttons to return the head to its home position.**
2. **If during filling both Start buttons are pressed the fill cycle will stop and the head will return to its home position.**
3. **The first few bags may be partially filled with air that was in the product line.**

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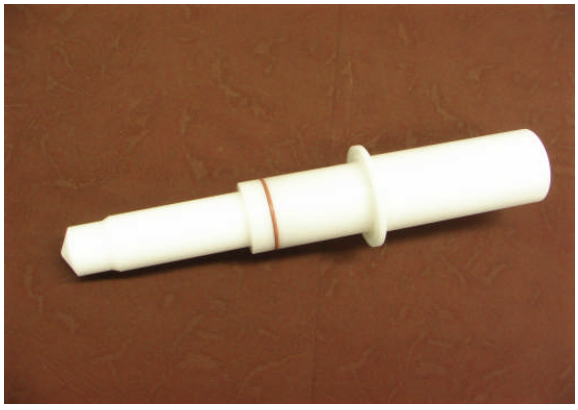
Bulk Mode:

1. Ensure the filling head is in the home position.
2. Press the F1 key on the Main screen to go to the Run screen.
3. Set the Target amount required by pressing F1. Press ⏎ to save.
4. If twin flow meters are fitted press F2 which takes you to the Flow meter page. This allows you to change from Turbine to Magnetic flow meter by pressing F2. Press F4 and then F1 to return to run screen.
5. Check that Bulk Mode is displayed. If not select by pressing F3.
6. Press both Start buttons. The head will move up.
7. Clamp your filling hose to the bottom of the fill head.
8. Press both start buttons to start filling. The product valve will open until the desired target is achieved each time you press the buttons.
9. When Bulk filling is complete. Remove the filling hose.
10. Press F3 to select BIB Mode.
11. Press both Start buttons for the filling head to return to its home position.

Notes: If the Emergency Stop is pressed during filling the fill valve will close and will no longer complete to the target amount. Release the Emergency Stop button and press both Start buttons to start a new fill cycle.



New fill valve Plunger

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SETUP SCREEN OPTIONS:

The filler is programmed to handle bags supplied with caps either fully on or in the dust cover position. To select go to the Cal screen by pressing F2 on the main screen and then Pressing the F3 button to select either dust cover or Full on(dust cover is the default).

There are also two other options that are used in the AUTO mode are the Return Delay and the recap delay. These are changed also on the Cal screen via the < and > buttons.

<: Return delay .01 sec amounts 0 - .99 sec
>: Recap delay .01 sec amounts 0 - .99 sec
F1: Dust cover delay time 0 - .99 sec Current setting in top right of screen
F2: Vacuum Screen
F3: Dust Cap or Full on
F4: To return to the main screen

VACUUM SCREEN OPTIONS:

There are also two other options that are used in the AUTO mode are the Vacuum pre fill and the Vacuum post fills. These are changed also on the Vacuum screen via the < and > buttons.

<: Pre fill setting for Vacuum before filling of the bag
>: Post fill vacuum once the fill head has lifted to catch any drips
F1: Vacuum Option if fitted can be switched off and on
F2: Info Screen
F3: Cap check Photo cell (If fitted)
F4: To return to the main screen

INFO SCREEN OPTIONS:

This screen has one machine setup option which gives you a run on time for the product pump this can be set by pressing F2 and setting the time 0-99 seconds.

Please Note: On the Info screen the F1 button takes you to a Display screen Configuration index this option is required to adjust the display screen parameters but should always left untouched (This is Now Protected by a Pin Code).

Default Communication Settings for the screen

COMS	**N/8/1**	**Baud**	**19200**
Error	**CRC**	**Hand**	**off**
Node	**2**		

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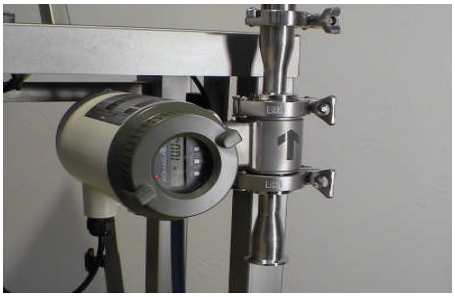

YOKOGAWA FLOW METER
(Option)

Magnetic Flow Meter Setting

The standard Magnetic Flow meter used by PROVEX is a Yokogawa AXF unit and gives High Accuracy and Repeatability.

Settings: 1000 pulses per Litre Transistor signal
4-20mA = 0-3 Litre per second (Not Used)

Non Factory Setting
B02: set to .1
B03: set to Flow Span = 3.000
B04: set to Flow Unit = L
B05: set to Time Unit = /s
D01: set to Rate
F01: set Pulse to = UNIT/P
F02: set Pulse scale to = .001

TURBINE FLOW METER
(Option)

Turbine Flow Meter

The standard Turbine Flow meter used by PROVEX is a PROCESSAUTOMATIC Turbine Flow Meter type unit which also gives High Accuracy and Repeatability.

Settings: 1” turbine 220 pulses per Litre signal (approx)
Via a two pin Military plug Pre amplifier back to the PLC

No Factory Setting is required as it is a totaled sealed unit
When product is flowing Input 0 will flash to confirm turbine is working

Installation: The flow meter must be installed with the marked arrow in the matching direction Of the flow.

Twin flow meters

If twin flow meters are fitted move to the run screen press F2 which takes you to the flow meter Screen
This allows you to change from turbine type flow meter to Magnetic flow meter by pressing F2

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EMERGENCY STOP

This function is designed to stop the filler and place the mechanism in the safe position at any stage of operation. Pushing the EMERGENCY STOP button will:

- Close the fill head

To reset press both start buttons at the machine will complete its operation.

For safety reasons the mechanism will not swing horizontally or release the cap.

Note: To Release the EMERGENCY STOP, twist the button clockwise.

When the Emergency stop button is pressed it will display a message on the screen This message clear when the Emergency stop is released or F1 pressed

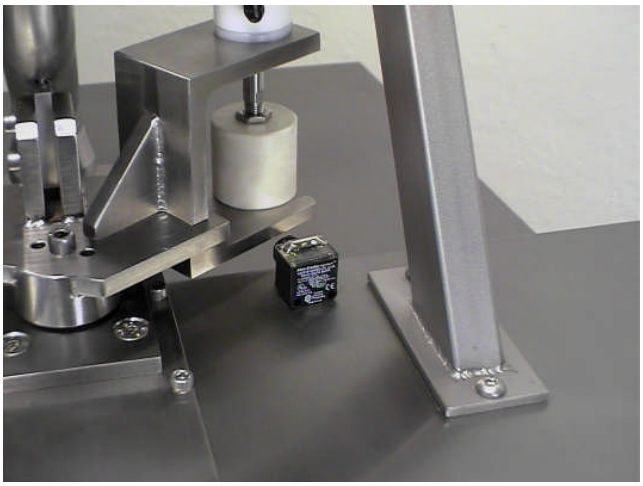
CAP CHECK PHOTOCELL

(If Fitted)

Some Provex Fillers have a background suppressed Photocell to detect if the cap has been removed properly.

This feature operates only in the Automatic Mode so care must be taken if you switch to Manual as the cap may be left at the fill point and the fill Spout may lower onto the cap and try to fill!!!!!

To disable the photo cell move from the main screen to the setup screen then to the vacuum screen and press F3 this screen will display it current state.



CAP CHECK PHOTO CELL

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Maintenance Requirements

As per any process machine standard maintenance is required and upkeep is important to guarantee production reliability.

Daily Maintenance Requirements:

Make sure the machine has been cleaned and washed down properly making shore that product has not set to the machine and that C.I.P completed.
Check vacuum tank is clean and empty of fluid.
Check all Product line seals are in place and all clamps are tight.
Check that the face seal is OK and not damaged.
Clean and check both product seals in the fill stem are clean and not worn
Check that the Spout Plate, Capper Bracket and fill head are aligned.

Check that the Cap Detection Photo cell is working properly (if fitted).

Test Emergency Stop Button if working

Check for loose equipment or items that may have come loose.

Weekly Maintenance Requirements:

Remove and inspect all product line seals check if they are in good condition, Replace if required.

Check the fill head cylinder base seal to see if it is leaking unscrew and replace BOTH with spares supplied with filler (part 810-0143) look for product above the seal.

Check the rear cabinet door seal for leaks adjust lock.

Test Emergency Stop Button if working.

Check Air Regulator for water (If full empty by pushing up the base and check Compressor).

Strip down the product valve and inspect by releasing the tri-clover fitting
Tighten fill plunger onto cylinder shaft if it has come loose, (hand tight)
Danger!!!! Check to make sure that the product pump is not still running
And the air is shut off.

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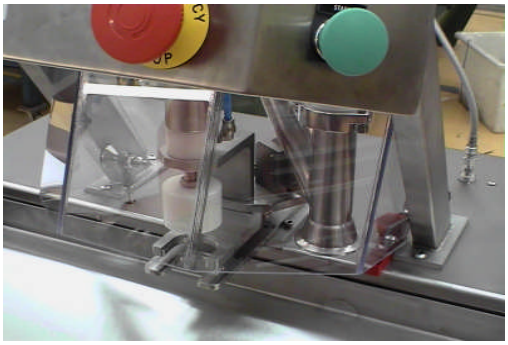

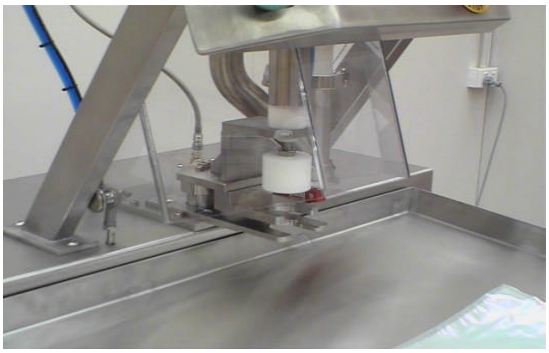

Options Section

Guarding

Automatic Splash Guard System

Due to the Danger of hot products one of the options on our filler is an automatic splash guard which rises out of the way to allow easier spout insertion to the filler fork.

The guard is controlled by the capper cylinder air circuit and is interlocked with a Guard master safety system which has final control over the fill valve.

If at any time during filling process the guard is lifted the fill valve will shut, until the guard is lowered to the safe position.

Hot fill table

At certain times during the filling process Spills can occur this can cause unwanted Products landing on the floor or the operators

We also offer a 10 liter hot fill table which in most cases will catch and funnel the product down a 1 ½ “ or 40mm tri clover fitting.

Dual Flow meter Option

If duel flow meters are factory fitted to the filler selection of the flow meter must be made by the operator on the display screen as well as swapping over the hose fittings.

To configure the filler for the required flow meter, start from the main screen by pressing F1 to move to the RUN screen and then select F2 again to move to the flow meter screen.
Once on the flow meter screen you can swap between Turbine and Mag flow by pressing F2

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Mass Flow meter Option

If a Mass flow meter is installed on the filler, selection between the flow meters is not required.

Info to follow

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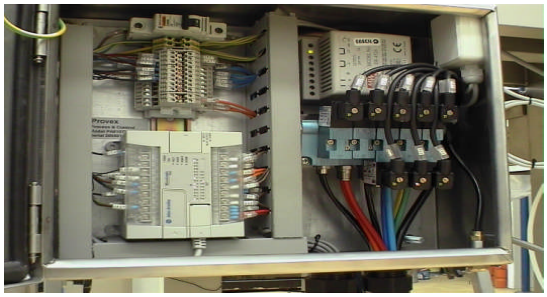
PARTS LIST FOR THE FILLING SECTION

ITEM No	NAME	PART NUMBER	QUANTITY
1	Lift Cylinder	810 - PC- 311.5 – DBMWQ	1
2	Lift Cylinder Proximity	810 - MRS-087-XBL-31	2
3	Shaft Body Case	810 – 0101	1
4	Main Shaft and Lock cap	810 – 0102	1
4a	Main Shaft Swivel Bush	810 – 0108	1
5	Shaft Sleeve	810 – 0103	1
6	Shaft Pivot Bar	810 – 0104	1
7	Shaft Pivot Bolt	810 – 0105	1
8	Shaft Pivot 7/16” rod end	810 – 0106	1
9	Shaft Pivot Lock Nut	810 – 0107	1
10	Shaft Pivot Cylinder	810 - PC - 171.5 – DXPBMW	1
11	Shaft Pivot Cylinder proximity	810- MRS – 087-XBL-17	2
12	Base Plate	810 – 0110	1
13	Base Plate Fixing Bolts	810 – 0111	4
14	Spout Plate*	810 – 0115*	1
15	Spout Plate Bolts	810 – 0116	4
16	Fill Head Bracket	810 – 0120	1
17	Fill Head Bracket Center Bolt	810 – 0121	1
18	Fill Head Bracket Pivot Bolts	810 – 0122	2
19	Capper Bracket	810 – 0130	1
20	Capper Cylinder	810 – PC – 171 – DXPBMW	1
21	Capper Spacer	810 – 0131	1
22	Capper Clamping Block	810 – 0132*	1
23	Capper Clamping Block nut	810 – 0133	1
24	Capper Fork Bracket *	810 – 0134*	
25	Product Line Support Body	810 – 0140	1
26	Product Line Swivel O Ring Kit	810 – 0141	3
27B	Fill Cylinder Base	810 – 0142B	1
28	Fill Cylinder	810 - CPC-0353-A-2.5	1
29B	Fill Cylinder Base O rings	810 – 0143B	2
30	Fill Cylinder Tri clover & Seal	810 – 0144	2
31B	Fill Cylinder Plug	810 – 0145B	1
32B	Fill Cylinder Plug O ring	810 – 0146B	1
33	Fill Cylinder spout Face Seal	810 – 0147	1
34	Fill Cylinder Body	810 – 0148	1
35	Fill Cylinder Top Cap	810 – 0149	1
36	Fill Cylinder base O ring	810 – 0150	1

*** Note: These items Alter depending on the particular bags being filled Spout info required**



PA810 – Single Head Bag Filling System

PARTS LIST FOR THE CONTROL SECTION

ITEM No	NAME	PART NUMBER	QUANTITY
100	PLC	810 – 1762-L24BWA Ser C	1
101	Display Screen	810 – 2711-M3A18L1	1
102	Power Supply	810 – S-25-24	1
103	Heater	810 – SK3105	1
104	Screen Cable	810 – 1761-CBL-HM02 C	1
105	Circuit Breaker	810 – LAN45MCB106	1
106	Single type terminal	810 – WK 4/U	1
107	Dual Terminal	810 – WKN 2.5 E/U	3
108	Single solenoid Valve	810 – 45A-LCD-DDAJ-1KJ	1
109	Double solenoid Valve	810 – 45A-NCD-DDAJ-1KJ	3
110	Manifold end Plate kit	810 – M-45008-01P	1
111	24Vdc plug and lead	810 – E392N3001ACH	7
112	Rear control box	810 – AE1004	1
113	Flow Meter (Yokogawa)	810 – AE202HM #	1
114	Air regulator	810 – CFDR10-2-S/S	1
115	Gauge	810 – 24142-16-0	1

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PARTS LIST FOR THE FRAME

ITEM No	NAME	PART NUMBER	QUANTITY
200	Main Frame Body	810 – 0150	1
201	Display Screen Enclosure	810 – 0151	1
202	Display Enclosure Brackets	810 – 0152	2
203	Machine Feet (option 1)	810 – 0160-50	4
204	Machine Casters (option 2)	810 – 0161-100	4
205	Product hose Type 1	810 – 0170	1
206	Product hose Type 2 (oil)	810 – 0171	1

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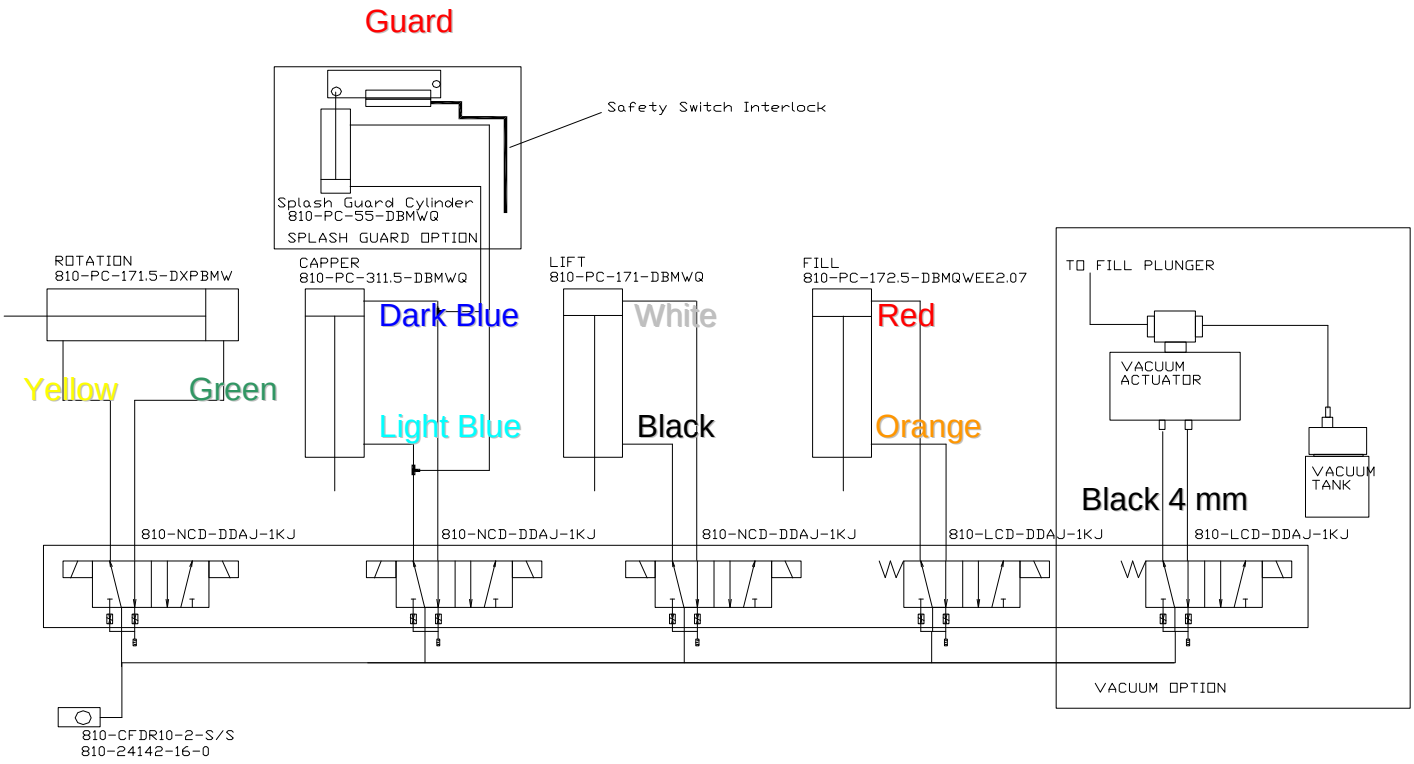
Pneumatic Control System



Air Requirements for the filling system:

Min 600 kPa. 10m3/hr of dry clean air.

Connection by ¼” BSP female port.

Air Manifold and hose layout

PA810 – Single Head Bag Filling System

Vacuum Control System

(Optional System)

This Option allows the operator to select the required pre fill and post fill vacuum time on the PA810 filler

Do not use Vacuum System on thick products or liquids that contain particulates.

To setup complete the following instructions:

1 - Check the vacuum tank is empty (open lid and inspect inside) if fluid present Flush out.

2 - Shut the drain valve at the base of the tank (If fitted).

3 - Connect an air supply the Regulator on the Vacuum tank this must be separate supply other than the filler.

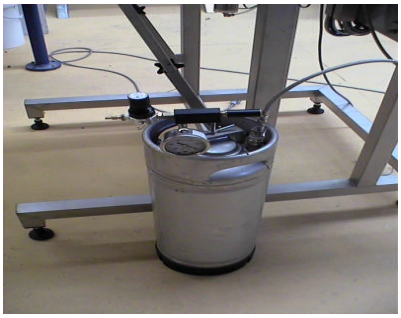
4 - Connect the suction line from the filler to the Vacuum tank.

5 - Adjust the air regulator on the vacuum tank to give the desired vacuum level check Vacuum Gauge on the top of the tank -20 to -60 Kpa.

6 – From the Main screen press F2 and move to the Setup screen then press F2 again to move to the Vacuum screen this will give you the full vacuum options.

F1 – Vacuum Off / On
< – Vacuum Pre fill time 0 – 5 sec 1/100th of a sec increment
> – Vacuum Post fill time 0 – 9.9 sec 1/100th of a sec increment
F3 – Photo eye if required on – off
F4 – Main Screen

7 – Once the settings are complete they will remain until altered again.



If Vacuum is selected on filler built after April 6, 2005 a new pulse System will operate keeping the tip clear of product for 10 minutes after the last bag is filled. The vacuum valve will pulse to clear the Spout every 5 sec for 1 second to suck up residual drips.
This will not affect your vacuum settings but work in conjunction with Them.

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PARTS LIST FOR THE VACUUM SYSTEM

ITEM No	NAME	PART NUMBER	QUANTITY
300	Vacuum Tank 18 Litres	810 – 0300	1
301	Vacuum Pump and Regulator	810 – 0301B	1
302	Vacuum Pilot Actuator Kit	810 – 0302B	1
303	Long 900mm Vacuum Hose Kit	810 – 0303	2
305	Vacuum Airline Kit	810 – 0305	1
306	Single solenoid Valve	810 – 45A-LCD-DDAJ-1KJ	1

PARTS LIST FOR THE SPLASH GUARD

ITEM No	NAME	PART NUMBER	QUANTITY
400	Lexon Clear Guard	810 – 0400	1
401	Guard lifts Cylinder and base	810 – PC- 55 - DBMWQ	1
402	Cylinder rod end	810 – 0402	1
403	Safety Switch and relay Kit	810 – 440N-C02076	1
404			
405			
406			

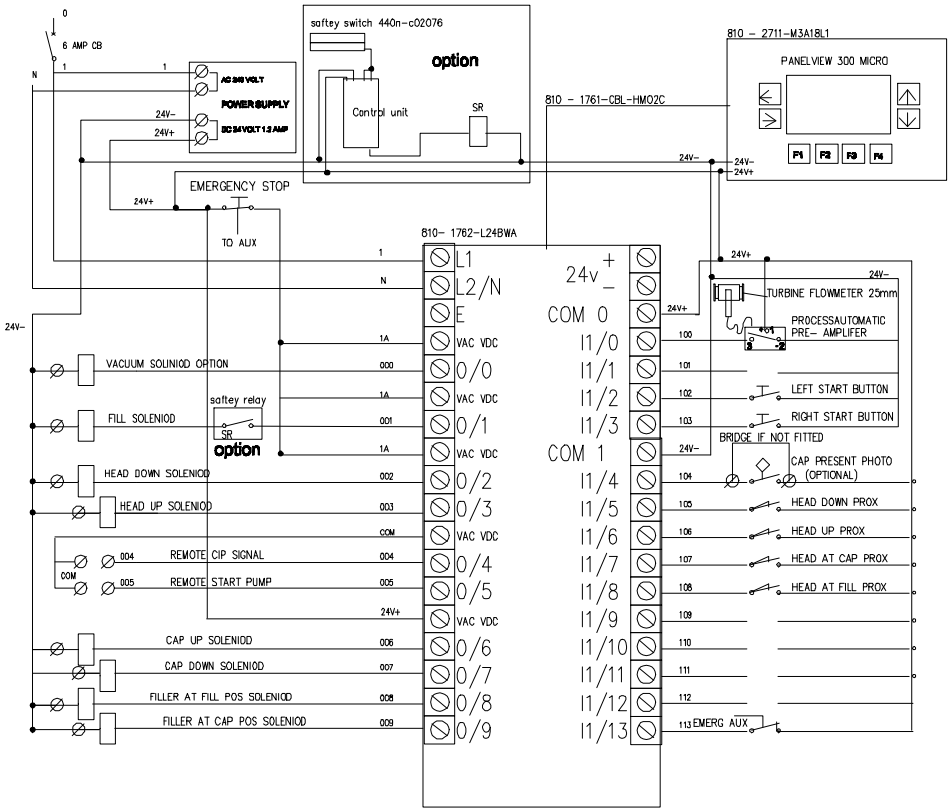
PARTS LIST FOR THE HOT FILL TABLE

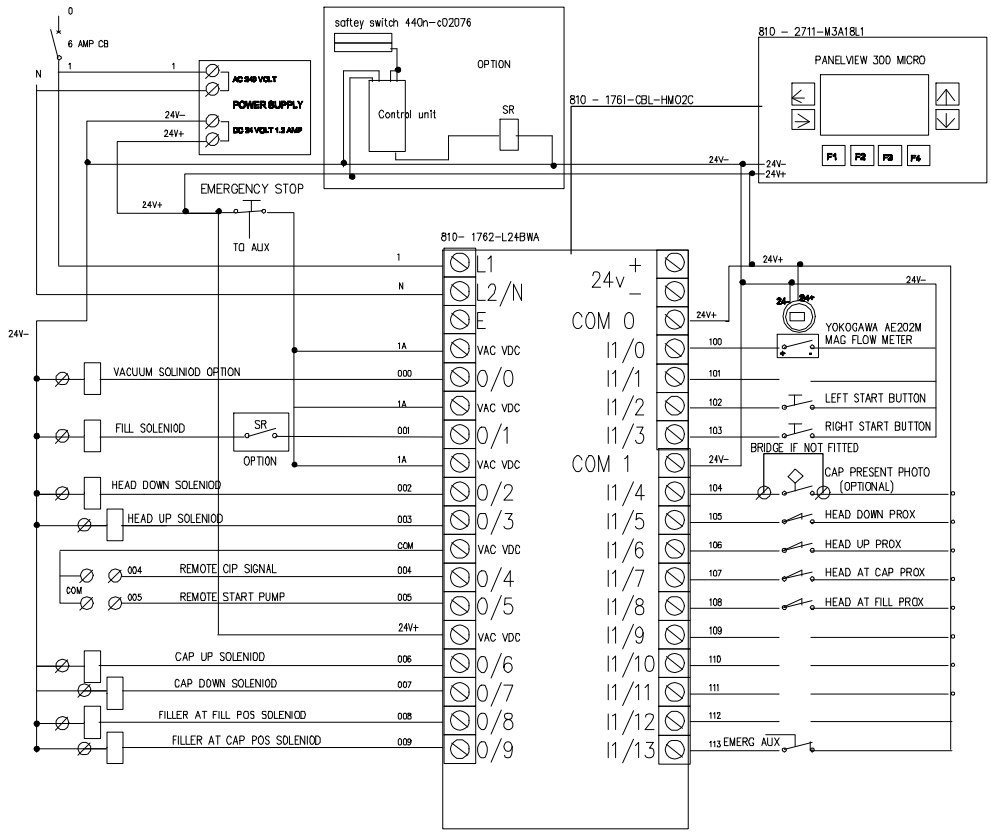
ITEM No	NAME	PART NUMBER	QUANTITY
500	700 X 700 Bounded table	810 – 0500	1
501	Strainer trough guard	810 – 0501	1

Parts List for Provex Approved Check Scale 0-150 Kg

ITEM No	NAME	PART NUMBER	QUANTITY
W60	60 Kg weights and measures Bench Scale	PA800 – W60	1

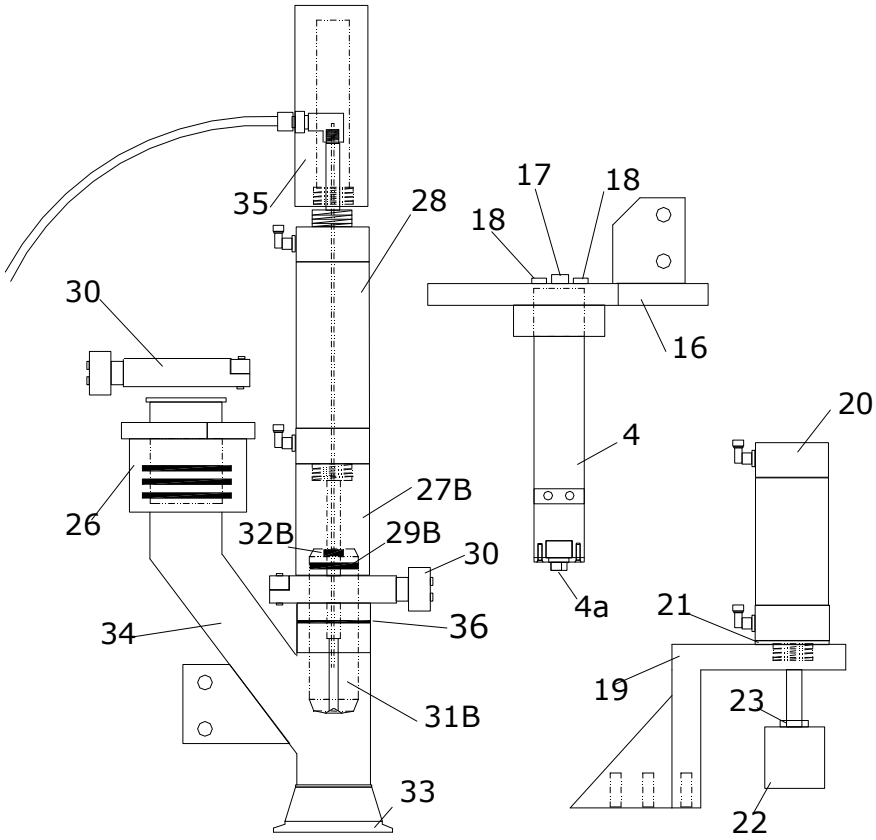
Provex PA810T control circuit

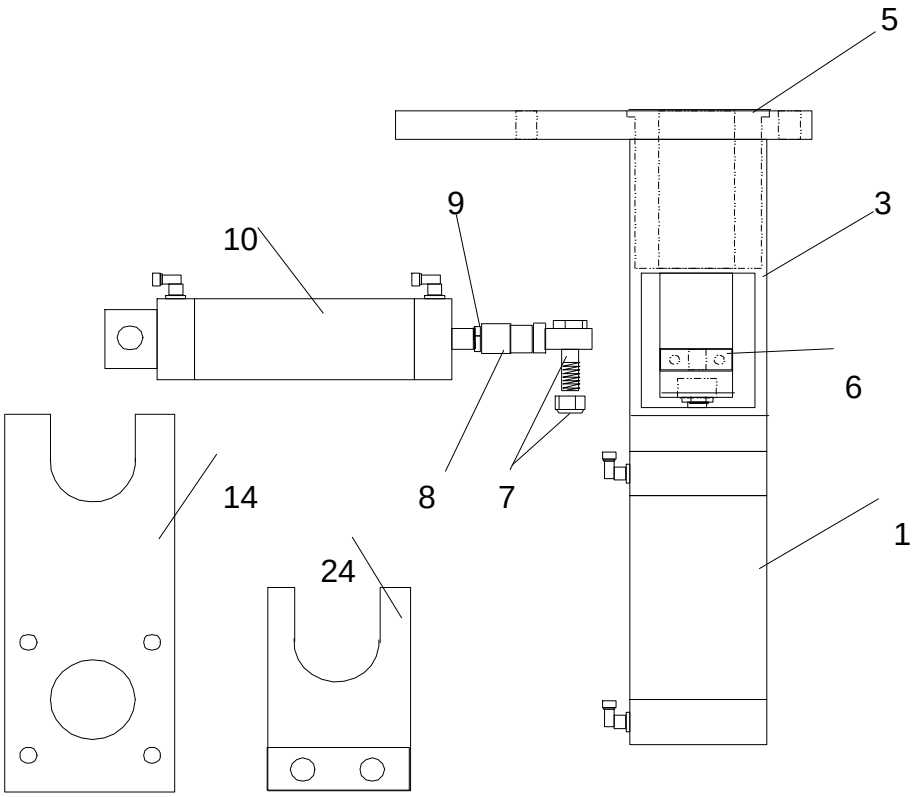




Provex PA810M control circuit

Provex Parts Drawings

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Certificate of Compliance

EMC Technologies Report No: M030527
Issue Date: 29th August 2003

Test Sample:	Provex Liquid Filler Single Head
Model Number:	PA810MV
Serial Number:	20020620
Manufacturer:	Automation Technical Services
Tested for:	Provex Pty Ltd
Address:	Factory 1, 29-39 Kirkham Road West Keysborough, Vic. 3173
Phone:	(03) 9701 6226
Fax:	(03) 9701 6223
Contact:	John Andrew
Email:	john@provex.com.au
Test Standards:	**EN61000-6-4: 1997** *Electromagnetic Compatibility (EMC) – Part 6: Generic standards – Section 4: Emission standard for industrial environments* **AS/NZS4251.2: 1999** *Electromagnetic Compatibility (EMC) Generic emission standard Part 2: Industrial environments*
Result of Test:	**The Test Sample complied with the above Standards. Refer to Report M030527 for full details**
Test Dates:	4th and 9th July, 2003

Test Officers:

Joseph Ho **Chieu Huynh**

Authorised Signature:

EMC Technologies Pty Ltd

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EMI Tests on the Provex Liquid Filler Single Head, in accordance with EN61000-6-4 and AS/NZS4251.2

1.0 INTRODUCTION

Electromagnetic Interference (EMI) tests were performed on the Provex Liquid Filler Single Head, Model PA810MV, in accordance with the emission requirements of EN61000-6-4 and AS/NZS4251.2. The details of the Equipment Under Test (EUT) and the test results are provided.

The test sample was provided by the Client. All results herein apply only to the test sample.

1.1 Summary

Conducted EMI	EN55011/ AS/NZS2064	Complied with Group 1 Class A limits by margin of 6.9dB
Radiated EMI	EN55011/ AS/NZS2064	Complied with Group 1 Class A limits by margin of 4.8dB

2.0 GENERAL INFORMATION

(Information supplied by the Client)

Test Sample:	Provex Liquid Filler Single Head
Model Name:	PA810MV
Serial Number:	20020620
Manufacturer:	Automation Technical Services
Microprocessor:	PLC
Voltage:	240V AC, 50Hz

2.1 Description

The EUT is a bag in box liquid filler.

2.2 Operating Conditions

The test filler was set to auto run mode.

2.3 Modifications

No modifications were performed.

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3.0 RESULTS

3.1 EN61000-6-4 Requirements

Clause 1	Scope	Noted
Clause 2	Normative references	Noted
Clause 3	Objective	Noted
Clause 4	Definitions	Noted
Clause 5	Industrial locations	Noted
Clause 6	Conditions during measurement	Noted, all tests and equipment are in accordance with the requirements of this standard.
Clause 7	Documentation for the purchaser/ user	Noted
Clause 8	Applicability	Noted
Clause 9	Emission limits	Complied, tested to the requirements of Table 1. Testing was performed in accordance with EN55011 (CISPR11).

3.2 EN55011 Requirements

Clause 1	General	Noted
Clause 2	Definitions	Noted
Clause 3	Frequencies designed for ISM use	Noted
Clause 4	Classification of ISM equipment	Group 1 Class A
Clause 5	Limits of electromagnetic disturbances	
Clause 5.1	Limits of terminal disturbance voltage	Tested to limits of Table 2A
Clause 5.2	Limits of electromagnetic radiation disturbance	Tested to limits of Table 3, at a measuring distance of 10 meters.
Clause 5.2.3	Frequency Band 1 GHz to 18 GHz	Not required by EN61000-6-4
Clause 5.3	Provisions for protection of specific safety services	Noted
Clause 6	General measurement requirements	Noted, all tests and equipment are in accordance with the requirements of this standard.
Clause 7	Special provisions for test site measurements (9 kHz to 1 GHz)	Noted
Clause 8	Radiation measurements: 1 to 18 GHz	Noted
Clause 9	Measurement “in situ”	Not applicable
Clause 10	Safety precautions	Noted
Clause 11	Assessment of conformity of equipment	Complies for sample size of one (1) unit

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3.3 AS/NZS 2064 Requirements

Clause 1	Scope and Object	Noted
Clause 2	Definitions	Noted
Clause 3	Frequencies designed for ISM use	Noted
Clause 4	Classification of ISM equipment	Group 1 Class A
Clause 5	Limits of electromagnetic disturbances	
Clause 5.1	Limits of terminal disturbance voltage	Tested to limits of Table IIA
Clause 5.2	Limits of electromagnetic radiation disturbance	Tested to limits of Table III, at a measuring distance of 10 meters.
Clause 5.2.3	Frequency Band 1 GHz to 18 GHz	Not required by AS/NZS4251.2
Clause 5.3	Provisions for protection of specific safety services	Noted
Clause 6	Assessment of conformity of equipment	Complies for sample size of one (1) unit
Clause 7	General measurement requirements	Noted, all tests and equipment are in accordance with the requirements of this standard.
Clause 8	Special provisions for test site measurements (9 kHz to 1 GHz)	Noted
Clause 9	Radiation measurements: 1 to 18 GHz	Noted
Clause 10	Measurement "in situ"	Not applicable
Clause 11	Safety precautions	Noted

3.4 Conducted EMI Results

Frequency MHz	Line	Measured QP Level dBµV	QP Limit dBµV	ΔQP ±dB	Measured AV Level dBµV	AV Limit dBµV	ΔAV ±dB
13.91	Neutral	66.1	73.0	-6.9	48.8	60.0	-11.2

The worst case conducted EMI occurred at 13.91 MHz and complied with the Group 1 Class A quasi peak and average limits by margins of 6.9 dB and 11.2 dB respectively. The measurement uncertainty for conducted emissions was ±2.0 dB.
Refer to Appendix B, graphs 1 & 2.

3.5 Radiated EMI Results

Frequency MHz	Polarisation	Measured QP Level dBµV/m	QP LIMIT dBµV/m	ΔQP ±dB
208.01	Vertical	35.2	40.0	-4.8
159.07	Vertical	33.7	40.0	-6.3

The worst case radiated EMI occurred at 208.01 MHz and complied with the Group 1 Class A quasi peak limit by a margin of 4.8 dB. The measurement uncertainty for radiated emissions was ±3.7 dB. Refer to Appendix B, graphs 3 & 4.

4.0 CONCLUSION

The Provex Liquid Filler Single Head, Model PA810MV, tested on behalf of Provex Pty Ltd, complied with emission requirements of EN61000-6-4 and AS/NZS4251.2.

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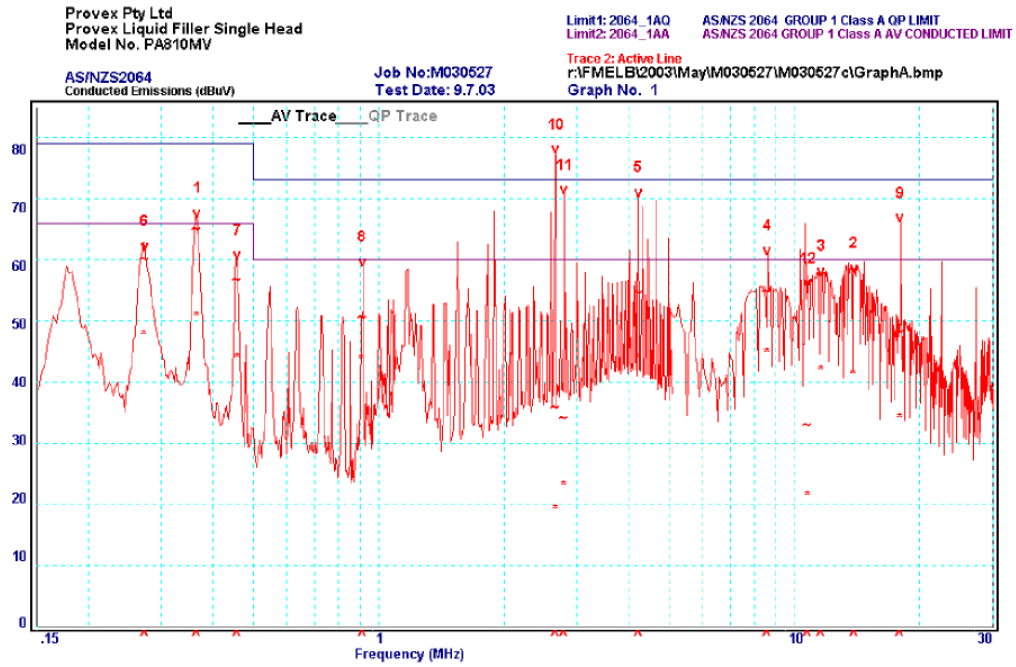
CONDUCTED EMI

Graph 1: Active Line, 0.15 MHz - 30 MHz



Peak	Frequency MHz	Line	QP Measured dBµV	QP Limit dBµV	ΔQP ±dB	Average Measured dBµV	AV Limit dBµV	ΔAV ±dB
1	0.366	Active	64.5	79.0	-14.5	50.0	66.0	-16.0
2	13.91	Active	57.8	73.0	-15.2	40.5	60.0	-19.5
3	11.62	Active	57.2	73.0	-15.8	41.1	60.0	-18.9
4	8.604	Active	54.3	73.0	-18.7	44.0	60.0	-16.0
5	4.211	Active	54.1	73.0	-18.9	43.3	60.0	-16.7
6	0.274	Active	59.5	79.0	-19.5	47.0	66.0	-19.0
7	0.458	Active	56.2	79.0	-22.8	43.2	66.0	-22.8
8	0.914	Active	50.0	73.0	-23.0	43.1	60.0	-16.9
9	17.94	Active	47.6	73.0	-25.4	33.3	60.0	-26.7
10	2.664	Active	35.2	73.0	-37.8	18.5	60.0	-41.5
11	2.792	Active	33.6	73.0	-39.4	22.4	60.0	-37.6
12	10.76	Active	32.3	73.0	-40.7	20.6	60.0	-39.4

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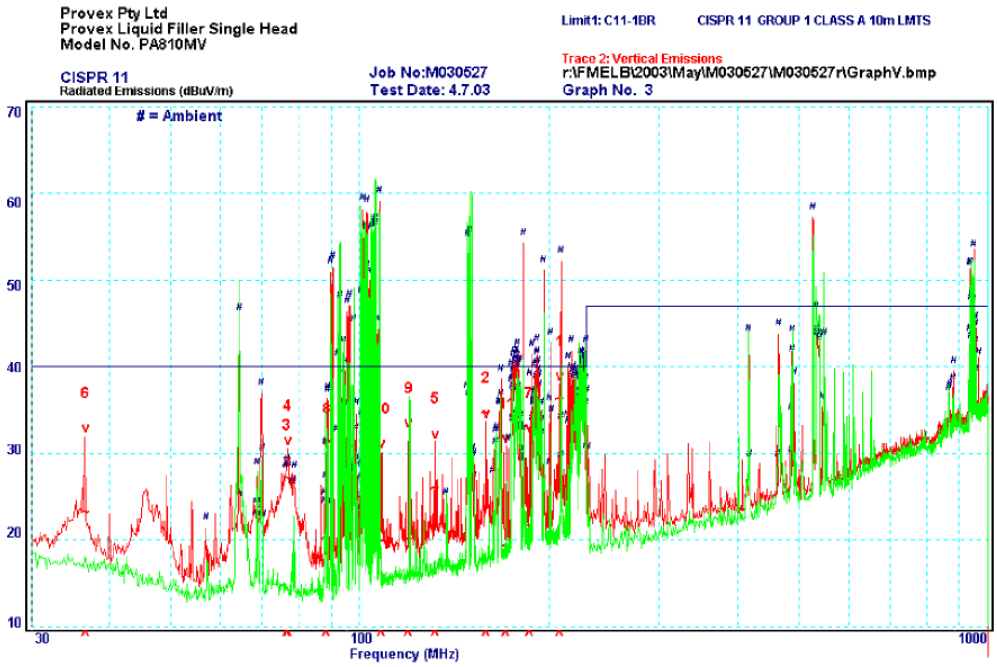
RADIATED EMI

Graph 3: Vertical Polarisation, 30 MHz - 1000 MHz



Peak	Frequency MHz	Polarisation	Measured QP Level dBµV/m	QP Limit dBµV/m	ΔQP ±dB
1	208.01	Vertical	35.2	40.0	-4.8
2	159.07	Vertical	33.7	40.0	-6.3
3	76.60	Vertical	27.6	40.0	-12.4
4	76.92	Vertical	26.1	40.0	-13.9
5	132.06	Vertical	25.0	40.0	-15.0
6	36.64	Vertical	22.2	40.0	-17.8
7	186.31	Vertical	20.6	40.0	-19.4
8	88.71	Vertical	19.2	40.0	-20.8
9	119.64	Vertical	19.1	40.0	-20.9
10	108.51	Vertical	19.0	40.0	-21.0
11	171.33	Vertical	18.2	40.0	-21.8

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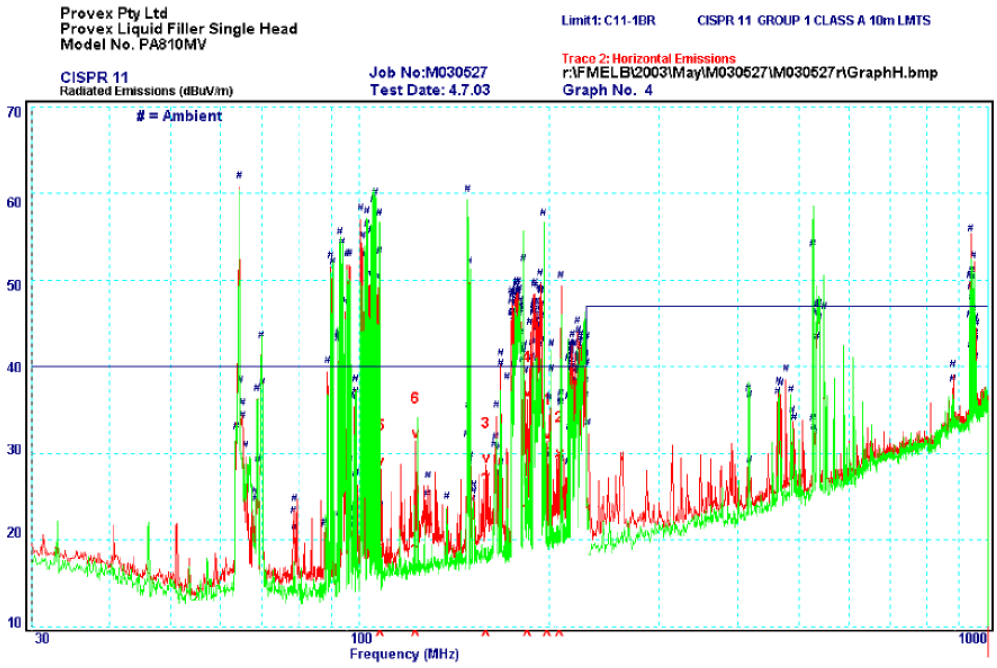
RADIATED EMI

Graph 4: Horizontal Polarisation 30 MHz - 1000 MHz



Peak	Frequency MHz	Polarisation	Measured QP Level dBµV/m	QP Limit dBµV/m	ΔQP ±dB
1	199.08	Horizontal	29.6	40.0	-10.4
2	208.02	Horizontal	28.7	40.0	-11.3
3	159.08	Horizontal	26.5	40.0	-13.5
4	184.93	Horizontal	22.9	40.0	-17.1
5	108.08	Horizontal	18.5	40.0	-21.5
6	122.83	Horizontal	18.3	40.0	-21.7

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